

Transportation System

ROADS

Current Conditions

There are currently approximately 1,818 miles of roads in the Bighorn National Forest. This system of roads accesses an area of approximately 1,738 square miles, including Wilderness and private lands. The road system in this analysis area varies from high standard US Highways to primitive, abandoned wheel tracks. The following table gives a breakdown of roads within the National Forest:

Table 12-A Miles of Road by Jurisdiction

CLASSIFICATION	LENGTH (miles)
Level 1	538
Level 2	745
Level 3	162
Level 4	98
Level 5	1
Unclassified	274
Total	1,818

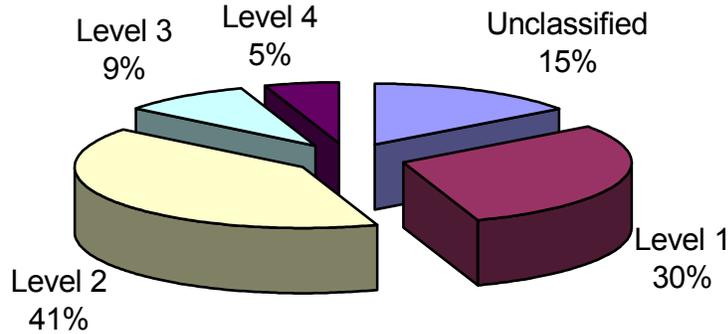
Those roads within the analysis area under Forest Service jurisdiction are divided into categories called maintenance levels. Maintenance levels range from 1-5, with 5 being the highest standard, and 1 being the lowest standard. There may also be additional roads no longer required for management purposes, or which have been created by off road vehicle use, but there still exists a road 'footprint.' These roads are called unclassified, and the mileage of these unclassified roads is an approximation. A description of maintenance levels is given below in table 2:

Table 12-B - Description of Road Maintenance Levels

Maintenance Level	Description
1	Closed to public travel – can be used intermittently for management purposes
2	Maintained for use by high clearance vehicles
3	Maintained for use by a prudent driver in a passenger car
4	Maintained for use by passenger cars with a moderate degree of user comfort. Usually double lane, gravel roads.
5	Maintained for a high degree of user comfort, double lane, often paved.

Figure 12-1

Percentage of each Maintenance Level based on Road Miles for each classification within Bighorn National Forest



Current road density for Bighorn National Forest is as follows:

Total Road Density (*not including wilderness and private lands*): **1.27** miles of road/per square mile of forest

Open Road Density (*not including unclassified roads*): **1.08** miles of road/per square mile of forest

Various structures and components are needed to manage and operate those roads under Forest Service jurisdiction. For those roads in the Bighorn National Forest, there are 24 bridges and 7 major culverts, not counting bridges and major culverts currently under special use permit. A major culvert includes those culverts with end-openings greater than 35 square feet. These structures along with the roads themselves represent a great investment in the transportation system, as well as a great cost for annual maintenance and, over the years, a resulting backlog of maintenance needs. The following table shows the breakdown of annual and deferred maintenance needs by maintenance level*:

Table 12-C

Maintenance Level	Miles	Annual cost/mile	Deferred cost/mile
1	580.89	\$683	\$886
2	759.77	\$920	\$2,316
3	191.59	\$6,561	\$8,109
4	77.68	\$5,991	\$14,730

Total needs for annual maintenance in Bighorn National Forest = \$ 2,818,139.14

Total needs for deferred maintenance in Bighorn National Forest = \$ 4,972,125.57

In addition, deferred maintenance for road bridges and major culverts is: \$ 263,679

- * Costs arrived from performing condition surveys on each level 3, 4, and 5 road on the Bighorn National Forest in 1999, and from a random sample of level 1 and 2 roads in 2000. Costs per mile were interpolated from these surveys.

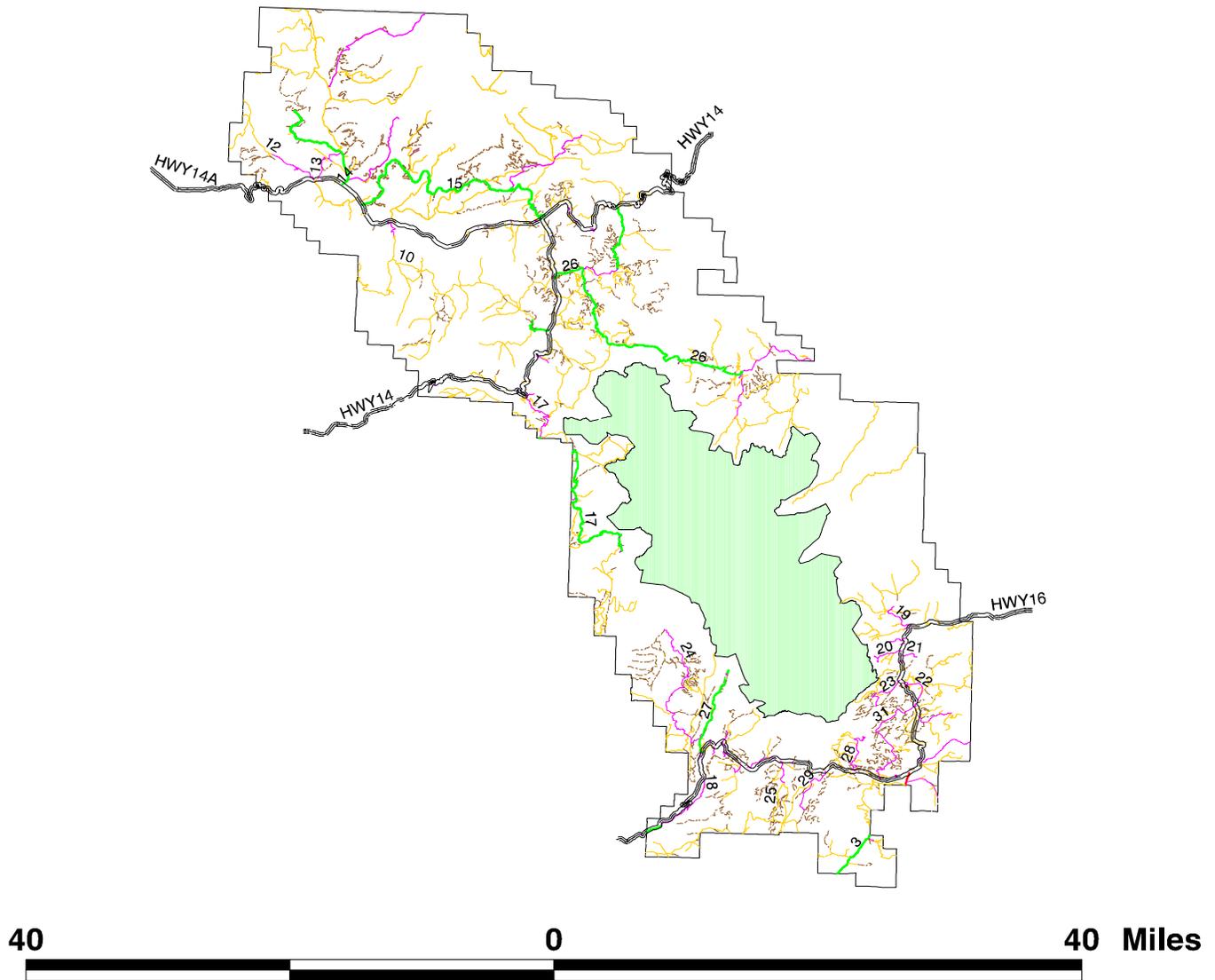
Current funding levels for road maintenance over the past three years have remained fairly constant, with an approximate allocation of \$ 460,000. This amount is far below the level needed for full implementation of the current transportation system forest wide. Current forest plan standard for full maintenance is also not being met under current allocations. Currently, general plan direction states to keep roads open to public use unless financing is not available to maintain the facility, or use is causing unacceptable damage to soil and water resources. Based on current deferred maintenance and annual maintenance needs, plan direction is not being met.

FOREST PLAN GOALS AND DESIRED CONDITIONS

Forest Plan direction for road management and operations are primarily based on resource needs rather than the road systems as a separate entity. In other words, the driving force behind road management decisions are primarily based on the management directions resource needs for an area. The Forest Plan does, however, give direction that roads may be closed if financing is not available to maintain the facility, if use is causing unacceptable resource damage, if they are unsafe, or if their use conflicts with the management objectives for an area. The Forest Plan also states that arterial and collector roads shall be maintained to a minimum maintenance level of 3, and all open local roads shall be maintained to a minimum maintenance level of 2. In contrast, forest plan goals to provide additional road and trail access to the National Forest boundary are being met.

Figure 12-B

ROAD DISPLAY BY MAINTENANCE LEVEL FOR THE BIGHORN NATIONAL FOREST



-  Highways
- Forest Service Roads**
-  1 - BASIC CUSTODIAL CARE (CLOSED)
-  2 - HIGH CLEARANCE VEHICLES
-  3 - SUITABLE FOR PASSENGER CARS
-  4 - MODERATE DEGREE OF USER COMFORT
-  5 - HIGH DEGREE OF USER COMFORT
-  Wild System Boundary
-  Forest Boundary



TRAILS

Trail Conditions

There are currently approximately 831 miles of trails within the Bighorn National Forest area. This trail system accesses an area of approximately 1,427 square miles, including 300 square miles of wilderness. The trail system in the analysis area varies from high standard ATV trails to primitive single track trails. The majority of the trails within the analysis area are constructed and maintained by the forest service. However, there is also a small length of trails in the analysis that are user created, or are abandoned trails that still have an existing footprint. These trails are referred to as unclassified. The following table shows the breakdown of classified and unclassified trails within the analysis area:

Table 12-D- Miles of Trail by status

Trail Status	Length (miles)
Forest Service (all trails)	1211
Motorized Trails	796
Snow Trails	317
Wilderness Trails	142

FOREST PLAN GOALS AND DESIRED CONDITIONS

Forest Plan direction for transportation facilities are primarily based on resource needs rather than the road systems as a separate entity. In other words, the driving force behind road management decisions are primarily based on the management directions resource needs for an area. Currently, general plan direction states to maintain all trails to certain minimum requirements, including maintaining drainage structures to prevent unacceptable resource damage, and to remove all hazards from trails to allow safe passage for specified classes of users. For the most part, this direction of the plan is being met, however, deferred maintenance surveys have revealed that a lack of a steady budget in trail maintenance has caused some degradation of the trail system that is not consistent with current plan direction. In contrast, plan direction for providing full ranges of trail opportunities in coordination with other state, federal and county municipal jurisdictions and private industries are generally being met.

Current annual and deferred costs for Bighorn National Forest are as follows:

Annual Maintenance: \$ 1,217 *per mile

Deferred Maintenance: \$ 13,125 *per mile

* Costs are interpolated from forest wide condition survey assessments done in 2000 and 2001

Total needs: \$ 1,011,327 annual maintenance and \$ 10,906,875 deferred maintenance

Figure 12-C

TRAIL DISPLAY FOR THE BIGHORN NATIONAL FOREST

